DOCUMENT RESUME

ED 162 218 CG 012 969

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TITLE The Effect of Positive and Negative Affect-Arousing Communications Upon Beliefs, Attitudes, Intentions, and Behaviors.
PUB DATE Mar 78
NOTE 14p.; Paper presented at the Annual Convention of the Eastern Psychological Association (49th, Washington, D.C., March 29-April 1, 1978)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Behavior Change; *Changing Attitudes; Communication (Thought Transfer); *Emotional Response; *Fear; *Prediction; Research Projects; *Smoking

ABSTRACT

An experiment was performed to test two hypotheses. One was that there would be a curvilinear relationship between increased degrees of a negative communication and persuasion, and the other was that there would be a positive and linear relationship between a positive communication and persuasion. College undergraduate smokers and nonsmokers were given false physiological feedback in order to manipulate their perceptions of different types of arousal (positive, negative, and control) and varying degrees of arousal (low, moderate, high, and control). The results showed that perceptions of negative arousal were related to belief acceptance and attitudes, while positive arousal were related to behavioral intentions. The results also demonstrated support for Fishbein and Ajzen's (1975) theory in that beliefs predicted attitudes, while attitudes predicted intentions. However, subjective norms also predicted attitudes and both attitudes and intentions predicted behaviors. The results not only demonstrate the importance of distinguishing between beliefs, attitudes, intentions, and behaviors when assessing the effects of persuasive communications, but also show the importance of distinguishing between communications differing in type of emotional impact (positive or negative). (Author)

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The Effect of Positive and Negative Affect-Arousing Communications Upon Beliefs, Attitudes, Intentions, and Behaviors

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Paper presented at the meeting of the Eastern Psychological Association, Washington, D.C., March, 1978.

CG012969

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Most of the previous research on emotionally arousing persuasive communications has focused on the effects of negative emotional arousal. Fear arousing communications, in particular, have been of interest for the past 25 years. Yet, despite such intensive research, the results of these investigations have yielded contradictory findings (Higbee, 1969) in that some investigators have reported a negative relationship between increased level of fear-arousal and persuasion (Janis and Feshbach, 1953; Haefner, 1956; Janis and Terwilliger, 1962) while others have found either a positive relationship or complex interactions between level of fear and other independent variables (e.g., Berkowitz and Cottingham, 1960; Insko, Arkoff and Insko, 1965; Leventhal and Niles, 1965; Leventhal and Singer, 1966; Leventhal, Singer and Jones, 1965; Leventhal, Watts, and Pagano, 1967; Rogers and Mewborn, 1976; Rogers and Thistlethwaite, 1970).

Several investigators (Janis, 1967; Higbee, 1969; McGuire, 1969) have attempted to integrate the diversity of findings in this area by postulating a nonmonotonic relationship between fear and persuasion. For instance McGuire (1969) stated that fear-arousing communications possess drive and cue properties. The drive properties, salient during low to moderate levels of fear, facilitate persuasion; while the cue properties (e.g. defensive avoidance, aggression) are operative during the moderate to high levels of fear and inhibit persuasion. Thus, an intermediate level of fear should be optimal for persuasion.

Until recently, the persuasive effects of a positive affect-arousing communication have been ignored by researchers. The results of those few investigations that have been performed indicate that communications which induce a state of positive arousal can elicit as much, if not more attitudinal

change and behavioral compliance than a comparable degree of fear-arousal. Evans, Rozelle, Lasater, Dembroski, and Allen (1970) compared the effects of high and moderate fear appeals with a positive arousing appeal. Their results indicated that although the fear appeal groups reported greater behavioral intentions than the positive appeal group, and the high fear group demonstrated the greatest amount of reported behavioral compliance, the positive appeal group showed the greatest amount of actual behavioral compliance. Several other investigators have also shown a facilitative persuasion effect through the use of positive arousal manipulations (Dabbs and Janis, 1965; Galizio and Hendrick, 1972; Janis, Kaye, and Kirschner, 1965). It has also been found (Giesen and Hendrick, 1974) that at "low" to "moderate"[1] levels of arousal, positive affect was just as effective as negative affect for inducing message acceptance.

The results of these investigations indicate that positive emotional arousal can serve as a potent source of motivation for compliance in the context of a persuasive communication. However, increased degrees of positive arousal should not possess the defensive and avoidance cue factors which would inhibit persuasion, postulated to occur with increased degrees of negative affect. Thus the relationship between increased degrees of positive arousing communications and persuasion should be positive and linear while the relationship between increased degrees of a negative arousing communication and persuasion should be curvilinear.

An attempt was made to test these predictions while also being responsive to the methodological weaknesses which have plagued this area of research. Several authors (Fishbein and Ajzen, 1975; Higbee, 1969; Krisher

1. Giesen and Hendrick (1974) actually label their arousal groups "low" and "high", but an inspection of their arousal means reveals that only low to moderate levels of arousal were generated.

Darley, and Darley, 1973) have pointed out that fear appeals typically differ along more than one dimension such that level of fear and a variety of other message factors (e.g., credibility, inherent persuasiveness, and interest) were confounded in these investigations. Thus in many studies, attitude change effects cannot be unequivocally attributed to the particular level of fear generated by the communication. Fishbein and Ajzen (1975) and Higbee (1969) also note that different criteria have been used to assess the persuasive effectiveness of the fear-arousing communications. Indices of persuasion have included attitude change, conformity to recommended actions, behavioral intentions, and self-reported behavior. Fishbein and Ajzen (1975) further suggest that the persuasive effects of the various informational (belief) statements contained in the fear communications have not been properly assessed by the dependent measures used in these experiments. Thus, task-appropriate measures of belief acceptance are also needed to test the persuasive effects of fear-arousing communications. It seems apparent, therefore, that research designs in the fear-arousing communications paradigm must be attentive to these various conceptual distinctions and methodological considerations if we are to make sense out of the data generated by this paradigm.

Therefore, this experiment attempted to test the previously mentioned predictions while maintaining attention to the various conceptual and methodological concerns outlined above. Since the main concern of this experiment was to compare the persuasive effectiveness of varying degrees of different types of emotionally arousing communications, it was necessary to manipulate the perception of (1) increased <u>degree</u> of arousal as well as (2) the affective label or <u>type</u> of arousal attributed to the varying

degrees of arousal. However, in order to avoid the previously mentioned confound between the arousal state and various message factors, a constant persuasive communication (dealing with smoking) was used in conjunction with false physiological feedback designed to influence the recipients' perception of their own arousal state. The technique of false physiological feedback was chosen for this purpose because previous investigations have shown it capable of manipulating both pleasant and unpleasant affective reactions (Harris and Katkin, 1975). Measures of belief acceptance of the communication, attitudes toward the topic, intentions to behave, and actual behavior were employed to assess the persuasive effectiveness of the various arousal states while in conjunction with the message, making it possible to extend the generality of the results across a wide variety of compliance responses.

Method

Subjects. A sample of 240 (120 smokers and 120 nonsmokers) undergraduates was randomly selected from a pretested sample of Introductory Psychology students who had volunteered to attend a pretesting session to fulfill part of their experimental participation requirement. Seven participants were excluded because of their expressed suspicions about the validity of the false feedback.

Procedure. Participants were seated and instructed that the experimenter was going to measure their physiologically based emotional reactions to a series of slides about cigarette smoking. They were also told that they would be able to monitor their own physiological reactions (heart rate and GSR) by means of a set of headphones and a meter. Some control groups received meter only (GSR) or heart rate only feedback, and one

group did not receive any feedback. In actuality, the participants (smokers and nonsmokers) monitored prerecorded false physiological feedback designed to manipulate their perceptions of different types of arousal (positive, negative, and control) and different degrees of arousal (low, moderate, high, and control). This resulted in a 2 x 3 x 4 factorial design. Different types of arousal were created by different readings of "pleasantness" or "unpleasantness" on a specially modified volt meter. Different degrees of arousal were manipulated by varying the frequency of the false heart beat sounds per minute, which ranged from 66 BPM in the Low Arousal condition to a maximum of 140 BPM in the High Arousal condition. As the participants were being connected to actual EKG electrodes, they were told that this apparatus was an extremely accurate, objective, and immediate measure of their emotional arousal. After the instructions ended, the experimenter left the room. After a 2 minute rest period, the slide sequence, with accompanying feedback, commenced. At the end of the slide sequence (five minutes) the experimenter administered the post-experimental questionnaire which included measures of emotional arousal, belief acceptance, attitudes toward smoking, intentions to perform a variety of actions with respect to smoking, and perceptions of their family and friends attitudes and behaviors toward smoking. One week later, the participants were called by telephone and asked if they performed their intended responses.

Results

Analyses of the arousal measures revealed that the meter feedback was effective in producing different types of arousal. The participants in the Positive Arousal condition reported greater perceptions of positive arousal (and less negative arousal) than those in either the Negative or

Control Arousal conditions, F (2, 209) = 11.16, $p < .01$. There were no significant differences between the latter two conditions. In addition, Non-Smokers reported greater perceptions of positive arousal than Smokers, F (1, 209) = 4.07, $p < .05$. As expected, the false heart rate feedback had no effect upon the type of reported arousal, but it had an unanticipated interaction effect upon reported degree of arousal. Specifically, the participants who were exposed to the fastest bogus heart rate and the "unpleasant" meter readings (High-Negative Arousal condition) reported the highest degrees of arousal, F (3, 209) = 6.86, $p < .01$, while those who received the fastest heart rate feedback coupled with the "pleasant" meter readings reported the lowest, F (2, 209) = 14.04, $p < .01$. These analyses also revealed that, regardless of the type of false heart rate feedback, the Non-Smokers were more aroused in the Negative Arousal group than in the Control Arousal group, who in turn were more aroused than those in the Positive Arousal group, F (2, 209) = 4.36, $p < .05$.

Although the meter feedback was effective in manipulating perceptions of different types of arousal, the meter feedback in conjunction with the bogus heart rate was not totally effective in manipulating perceptions of increased degrees of arousal in accordance with the design of this experiment. Therefore, in order to determine fully the relationship between various arousal states and persuasion, a series of multiple regression analyses were performed in which the participant's self-reported arousal scores were treated as predictor variables for each of the separate persuasion criteria. The predictor set also included measures of comprehension (recall and recognition) of the slide content, attitudes toward smoking, belief acceptance, behavioral intention, and measures of the

participant's family and friends smoking attitudes and behaviors. For all regression analyses the predictor set included the same variables except for the previous criterion variable which was then reincluded for the next analysis.

The results of these analyses revealed that states of negative affect arousal significantly ($p < .05$) predicted belief acceptance, while positive affect predicted behavioral intentions. Scatter plot analyses revealed no discernable curvilinear relationships for the negative arousal variable. These analyses also provided strong support for the Fishbein and Ajzen (1975) model in that beliefs toward smoking predicted attitudes toward smoking, which in turn predicted intentions to act toward smoking. Subjective norms (family and friends attitudes) also predicted attitudes to a significant degree ($p < .05$).

While the predictor variables were relatively successful in accounting for the variance of attitudes, beliefs, and intentions (R^2's = .62, .34, and .16 respectively), they were less effective in predicting actual behaviors (R^2's from .12 to .16). However, for smokers only, the predictor set accounted for between 28 and 41 percent of the variance and revealed that actually quitting smoking was predicted best by the smoker's intention to just cut down on the amount smoked.

Discussion

This experiment was concerned with the manipulation of various degrees and types of arousal by a procedure which was independent of the content of the communication. This was done in response to the methodological issues raised earlier regarding the confounding of various message factors and emotional state, prevalent in the fear appeal literature.

The results of the analyses of the arousal manipulation check revealed that the meter feedback was effective in weakening the negative reaction to the persuasive message. The "pleasant" and "unpleasant" meter feedback was accepted by the participants exposed to it. The false heart beats worked with limited success in creating the perception of increased arousal. The heart rate feedback was most effective in manipulating perceived arousal within a negative context. That is, when the feedback provided by the meter was "unpleasant", increased heart rate feedback led to greater perceptions of arousal. In addition, the results revealed that the Non-Smokers were generally more susceptible to the feedback procedures than were the Smokers, due probably to less experience in defending against emotional reactivity from a persuasive, anti-smoking communication.

The findings of the regression analyses suggest that the motivational differences between positive and negative arousal states may be related to different cognitive processes. Belief acceptance, with its significant relationship with negative affect, may reflect an intellectualizing, coping strategy for dealing with the threat object and to the state of negative arousal, whereas actually responding, or intending to do so, seems to be motivated by the approach tendencies of positive arousal. The results of this experiment did not provide support for the hypothesis that negative arousal would be related to persuasion/compliance in a nonmonotonic fashion, due probably to the relatively low levels of arousal actually manipulated.

The usefulness of the Fishbein model in understanding attitudes and behavioral change was also demonstrated. The results indicated that a person's predisposition to respond is determined by the person's evaluation

and beliefs about the topic, which is influenced by how other relevant people think about it. Previous research in the attitude change area in general, and in the fear-arousal area in particular, has suffered from a failure to distinguish among these components, resulting in contradictory findings. Finally, the findings from this experiment demonstrate the increased predictive power of attitudinal criteria when a multivariate (multiple regression) strategy is employed.

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